

AMENDMENTS TO THE CLAIMS

Following is a complete listing of the claims pending in the application, as amended:

1. (Currently amended) A method for producing a lithium composite oxide for use as a positive electrode active material for lithium secondary batteries, comprising the steps of:
forming an intermediate composite oxide powder by subjecting an ~~organic~~ inorganic acid salt solution of metal elements constituting a final composite oxide other than lithium to [a] ~~spray pyrolysis process to obtain an intermediate composite oxide powder;~~ and solid state-mixing the intermediate composite oxide powder and ~~an organic acid~~ a hydroxide salt of lithium, followed by thermally treating the mixture.
2. (Currently amended) The method according to claim 1, wherein the ~~organic~~ inorganic acid salt solution includes at least one metal element selected from the group consisting of Al, Co, Cr, Fe, Ni, Mn, [Ni,] Mg, Cu and Sb.
3. (Currently amended) The method according to claim 2, wherein the ~~organic~~ inorganic acid salt solution includes at least one metal element selected from the group consisting of Co, Mn and Ni.
4. (Currently amended) The method according to claim 1, wherein the ~~organic~~ inorganic acid salt solution is a mixed solution of $\text{Mn}(\text{NO}_3)_2 \cdot 4\text{H}_2\text{O}$ and $\text{Ni}(\text{NO}_3)_2 \cdot 6\text{H}_2\text{O}$.
5. (Original) The method according to claim 4, wherein the intermediate composite oxide is an oxide represented by $(\text{Ni}_{1/2}\text{Mn}_{1/2})\text{O}_{2+y}$.
6. (Currently amended) The method according to claim 1 or 5, wherein the lithium composite oxide is an oxide represented by $\text{Li}_{1+x}(\text{Ni}_{1/2}\text{Mn}_{1/2})\text{O}_2$, ~~(wherein $0 \leq x \leq 0.1$)~~ wherein $0 \leq x \leq 0.1$.

7. (Currently amended) The method according to claim 1, wherein the ~~organic~~ inorganic acid salt solution is a mixed solution of $\text{Ni}(\text{NO}_3)_2 \cdot 6\text{H}_2\text{O}$, $\text{Co}(\text{NO}_3)_2 \cdot 6\text{H}_2\text{O}$ and $\text{Mn}(\text{NO}_3)_2 \cdot 4\text{H}_2\text{O}$.

8. (Original) The method according to claim 1, wherein the intermediate composite oxide is an oxide represented by $(\text{Ni}_{1/3}\text{Co}_{1/3}\text{Mn}_{1/3})\text{O}_{2+y}$.

9. (Currently amended) The method according to claim 1 or 8, wherein the lithium composite oxide is an oxide represented by $\text{Li}_{1+x}(\text{Ni}_{1/3}\text{Co}_{1/3}\text{Mn}_{1/3})\text{O}_2$ (~~wherein $0 \leq x \leq 0.1$~~), wherein $0 \leq x \leq 0.1$.

10. (Currently amended) The method according to claim 1, wherein the final lithium composite oxide is an oxide represented by $\text{Li}_{1+x}(\text{M}_y\text{Mn}_{2-y})\text{O}_4$ (~~wherein~~ , wherein $0 \leq x \leq 0.1$, $0 \leq y \leq 0.5$ and M is at least one selected from the group consisting of Al, Co, Cr, Fe, Ni, Mg, Cu and [Sb]) Sb.

11. (Currently amended) The method according to claim 1, wherein the step of forming the intermediate composite oxide powder includes the sub-steps of:

measuring the amount of ~~organic~~ inorganic acid salts of metal elements constituting the final composite oxide other than lithium in the stoichiometric ratio of the constituent metal elements;

dissolving the ~~organic~~ inorganic acid salts in distilled water or alcohol, adding a chelating agent thereto, and stirring the mixture; and

spraying the aqueous or alcoholic solution of the ~~organic acid salts~~ stirred mixture to form liquid droplets, and pyrolyzing the liquid droplets at about $400\text{--}1,000^\circ\text{C}$., to form the intermediate composite oxide.

12. (Currently amended) The method according to claim 11, wherein the chelating agent is selected from the group consisting of tartaric acid, citric acid, formic acid, glycolic acid, polyacrylic acid, adipic acid, glycine, amino acids and [PVA] polyvinyl acetate.

13. (Original) The method according to claim 11, wherein the pyrolysis is performed in a vertical pyrolysis furnace.

14. (Original) The method according to claim 1, wherein the thermal treatment is performed in the temperature range of about 400°-1000° C.

15. (Withdrawn) A lithium composite oxide produced by the method according to any one of claims 1 to 14.

16. (Withdrawn) A lithium secondary battery manufactured using the lithium composite oxide produced by the method according to any one of claims 1 to 14, as a positive electrode active material.